



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30303MEMORANDUM

DATE: OCT 4 1993

SUBJECT: Review of Explanation of Significant Differences Waiver
of Air Emissions Treatment Using Activated Carbon for
Medley Farm Superfund Site, Gaffney, Cherokee County,
South CarolinaFROM: Winston A. Smith, Director *Winston A. Smith*
Air, Pesticides and Toxics
Management DivisionTO: Joseph R. Iranzmathes, Director
Waste Management Division

In response to Ralph Howard's memorandum dated July 7, 1993, we have reviewed the Explanation of Significant Differences Waiver of Air Emissions Treatment Using Activated Carbon for the Medley Farm Superfund Site located in Gaffney, Cherokee County, South Carolina.

A cancer risk assessment was performed to evaluate the air impacts from the selected remedies (air stripper and soil vapor extraction) that are going to be used at the site. The TSCREEN model was used to estimate 1-hour maximum predicted concentrations, and then a conservative conversion factor was utilized to derive maximum predicted annual concentration values from the TSCREEN. The maximum predicted annual concentrations obtained by the TSCREEN model were multiplied by the appropriate unit cancer risk factor and summed to obtain the maximum predicted cancer risk.

The maximum predicted concentrations of contaminants were estimated to be 300-340 meters downwind of the source and the estimated maximum predicted cancer risk 2.8×10^{-5} . According to the results the estimated maximum predicted cancer risk for the combined remedy is in the range of 1×10^{-4} - 1×10^{-6} which is considered to be protective to human health and the environment¹. Therefore, we do not have any further comments.

Attached are the results from the TSCREEN model and the estimated risk due to each chemical.

If you have any questions, or if we can be of further assistance, please have your staff contact Angel O. Berrios at X2864.

Attachment

1. Acceptable risk, according to: "Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part B).

RISK ASSESSMENT FOR THE MEDLEY SUPERFUND SITE						
STACK ^a Number	COMPOUND	CAS NUMBER	1-hour CONCENTRATION (ug/m ³)	ANNUAL ^b CONCENTRATION (ug/m ³)	UNIT RISK (ug/m ³) ⁻¹	RISK
1	Trichloroethene	79016	6.914	0.553	1.7X10 ⁻⁶	9.40X10 ⁻⁷
1	Tetrachloroethene	127184	32.27	2.582	5.2X10 ⁻⁷	1.34X10 ⁻⁶
1	1,1 Dichloroethene	75354	0.2607	0.021	5.0X10 ⁻⁵	1.05X10 ⁻⁶
1	1,2 Dichloroethane	107162	1.043	0.083	2.6X10 ⁻⁵	2.16X10 ⁻⁶
2	1,1 Dichloroethene	75354	4.28	0.3424	5.0X10 ⁻⁵	1.71X10 ⁻⁵
2	1,2 Dichloroethane	107162	1.885	0.1508	2.6X10 ⁻⁵	3.92X10 ⁻⁶
2	Benzene	71432	0.2753	0.022	8.3X10 ⁻⁶	1.83X10 ⁻⁷
2	Trichloroethene	79016	3.546	0.2837	1.7X10 ⁻⁶	4.82X10 ⁻⁷
2	Tetrachloroethene	127184	2.394	0.1915	5.2X10 ⁻⁷	9.96X10 ⁻⁸
2	Chloroform	67663	0.4205	0.0336	2.3X10 ⁻⁵	7.73X10 ⁻⁷

TOTAL RISK 2.80X10⁻⁵

a) Stack Number : 1 = Soil Vapor Extraction 2 = Air Stripper

b) Annual Concentration = (1-hour Concentration)(0.08)